THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF FISH AND GAME
MARINE RESOURCES REGION

REPORT FOR THE MONTH OF DECEMBER 1970

Warden Paul Smith, while engaged in an abalone diving survey with Department personnel, drowned off the Mendocino County coast. This tragic accident occurred on December 19, 1970 and his body was recovered on Tuesday, December 22. Paul, headquartered in Eureka, had been employed by the Department slightly more than one year. He was an outstanding young warden with a great potential for future leadership. He leaves his widow Sally and two small sons. Paul, a graduate in Police Science from San Jose State College, will be an extremely difficult man to replace both as a friend and a fine enforcement officer.

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Convictions obtained during the calendar year 1970 reflects a total of 4,131 convictions as compared to 3,349 convictions for the calendar year 1969. Additionally, marine patrol wardens collected fines totaling $107,446.30 for 1970 as compared to $78,410.32 for 1969.

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THE FAO TECHNICAL CONFERENCE ON MARINE POLLUTION
AND ITS EFFECTS ON LIVING RESOURCES AND FISHING
WAS HELD IN ROME FROM DECEMBER 9 - 18, 1970

Amidst a setting of over 2,000 years of history, scientists from 40 nations discussed their mutual problems and their possible solutions. The similarity of problems on a global scale and the crying need for solutions was very evident.

Papers presented fell into seven general categories: (1) Marine pollution in the world today; (2) Behavior and fate of pollutants in the marine environment; (3) Effects of pollutants on the biology and life cycle of marine organisms; (4) Ecosystem modifications and effects on marine communities; (5) Technical aspects of minimizing pollution and countering its effects; (6) Effects of pollutants on quality of marine products and effects on fishing; (7) Scientific basis for international legislative control of marine pollution in the interests of protection of marine resources and fisheries.

I presented a paper on a trawl study in an area of heavy waste discharge: Santa Monica Bay, California.

Dr. McDuffy of New York, although not on the program, came to Rome to reveal his recent findings on high levels of mercury in canned tuna and in swordfish. His communication was mostly with the press. He did, however, cause some stir, especially among the Americans-----John G. Carlisle, Jr.

I. WILDLIFE PROTECTION

A. Canneries

Reduction facilities of southern California canneries continued to operate at near capacity on anchovies throughout the month and when weather permitted, fair catches of jack mackerel were landed.

Tuna landings were heavy during the first part of the month but tailed off considerably during the latter stages.

December marked the first significant delivery of squid to the canneries.

B. Market Fish

Landings of market fish were somewhat less than normal for this period of the year due largely to inclement weather. Southern California markets relied mainly on fish from Mexico while the drag boat fleet provided fair amounts of bottomfish to the central and northern California dealers.

Crab landings were poor in the central California area and price negotiations have prevented the northern fleet from operating. It is expected that as usual the price dispute will be settled by the first of the year and the fleet will sail shortly thereafter.

C. Sportfish

Sportfishing in southern California was generally poor to fair with bottomfish predominating. Scattered catches of barracuda and kelp bass however, provided fair sport particularly in the more southern areas of the State.

In central California, weather permitting, sport fishermen enjoyed good luck on rockfish and lingcod. Extremely low tides throughout the month of December provided good clamming and abalone picking.

D. Weather

Fishing, both sport and commercial, was generally hampered throughout the month by extremely heavy rains and strong winds. The run-off from rivers emptying into the sea also curtailed fishing considerably.

E. Law Enforcement

In southern California, emphasis continued to be placed on the patrol of the 3 mile restricted area for the anchovy reduction fishery. The patrol boat RAINBOW was brought from Morro Bay into the Santa Barbara area to beef up our patrol efforts in that region.

The crew of one large seiner was cited for taking anchovies inside the 3 mile limit off the Ventura county coast. Some 44,200 pounds of anchovies were seized and the net bonded and returned to the owner.

The robbing of lobster traps also came in for considerable attention and a number of arrests were made for this violation.

On the sports side the low tides necessitated heavy patrol of clam and abalone beaches and numerous citations were issued.

Convictions obtained during the calendar year 1970 reflects a total of 4,131 convictions as compared to 3,349 convictions for the calendar year 1969. Additionally, marine patrol wardens collected fines totaling $107,446.30 for 1970 as compared to $78,410.32 for 1969.

F. Pollution

Seven spills from merchant vessels, and four from U. S. Navy ships were investigated. Additionally, there were fifteen investigations of shore side facilities. A total of some 467 barrels of oil were involved in these investigations.

Shell Chemical Corporation of Ventura was cited twice within 6 days for 3 counts of pollution caused by urea, ammonia, and nitric acid.

There were ten successful prosecutions of violators of Section 5650.

G. Miscellaneous

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2. BOTTOMFISH

A. Fishery

Flatfish: Several periods of stormy weather affected trawling during December. Fishing effort declined following the typical pattern of past years. Dover sole caught from deep water continued to dominate northern California landings. Occasional good catches of petrale sole were made by Fort Bragg and Eureka fishermen.

English sole was the leading flatfish in central California landings.

Crab traps set between 20 and 40 fathoms in the Gulf of the Farallones have kept trawlers out of that area.

Roundfish: Moderate landings of sablefish and rockfish were made at major ports. Channel rockfish and sablefish caught in conjunction with Dover sole comprised most of the roundfish landings at Eureka and Fort Bragg. Central California roundfish landings were comprised of several species with bocaccio, chilipepper rockfish, and sablefish comprising most of the catch.

B. Research

Flatfish: Market sampling of the flatfish landings was continued at major ports. Considerable effort was devoted to ageing samples of fish from otoliths and interopercles.

Analysis of Dover sole tagging experiments of 1949 and 1962 to determine population stocks is near completion. The analysis suggests that a single

population group of Dover sole exists off the Eureka-Crescent City area.

Seven recaptures of Dover sole tagged in 1969 off Eureka were returned by fishermen; all were caught near release areas.

A 7-day cruise aboard the R/V NAUTILUS off San Francisco was completed. English and petrale sole were taken for age and growth and ecological studies.

Roundfish: Most of the month was spent working on the data taken during the 1969-70 rockfish cruises. Maximum economic yield and greatest poundages of sablefish were taken on the 410 and 330 fathom stations. A seasonal variation in length of sablefish was found at all stations of 200 fathoms or deeper. This is apparently caused by an offshore movement of smaller sablefish during the fall in association with the onset of warm water conditions with the beginning of the Davidson Current.

A close association of low dissolved oxygen and maximum sablefish abundance was found. The bulk of the adult population of sablefish were caught where less than 1.0ml/l of oxygen occurred. The peak abundance was at the 410 fathom station.

3. SHELLFISH

A. Fishery

Crab: At San Francisco the November opening price of 42 cents per pound was dropped to 30 cents per pound on December 7. Price remained the same throughout the rest of the month. November landings were approximately 182,000 pounds. These are incomplete returns but indicate that the landings will be lower than the 760,000 pounds landed in November 1969. Because of low landings, many boats have left the central California fishery to fish the northern California areas of Fort Bragg and Eureka.

The northern California season opened December 1, but a test pickout conducted by the industry in Eureka on December 2, yielded only 20% meat recovery. This was not considered a satisfactory recovery and no price agreement has been reached. Fishing will probably not begin until the first of the year, at which time there may be another test pickout. Fort Bragg crabbers have been fishing for 27 cents per pound with good success.

Shrimp: Ocean shrimp season closed. One vessel is fishing for spot prawns with traps off Monterey.

Oysters: In northern California Eureka Oyster Farms report that they are turning out about 600 gallons per week with 4 days of harvesting. The oysters are a little too young (150 per gallon), but are in good condition.

Coast Oyster Company is harvesting daily and transplanting. Fresh shipments are up and the condition is good for this time of year.

A shipment of 650 bushels of Pacific oyster seed was inspected for pests at Morro Bay. This seed was trucked from Liberty Bay, Washington. It had been transferred from Pendrell Sound, Canada during the first part of December.

Production of oysters at Tomales Bay, Drakes Estero and Morro Bay has been good. Market demand has been high.

B. Research

Crab: In central California trap sampling was initiated on December 5 to determine sex, width, and number of crabs. Condition of legal males (159 mm or more), and size and color of the sponges of ovigerous females were also determined. Sampling was conducted aboard commercial fishing boats operating out of San Francisco and Bodega Bay. Most of the areas currently being fished by the crab fleet were covered by the sampling.

Fourteen (14) ovigerous females were saved from the trap samples. These crabs were taken to the Marine Culture Laboratory at Granite Canyon where mass culturing of the larvae will be conducted.

Crab cruise 70-S-8 was completed December 1 off northern California. A total of 52 market crab and 3 tanner crab tows was made. Of the 11,432 market crabs caught, 98.9 percent were juveniles. Only 73 legal males were caught. The depth distribution was quite different from that found during the 1969 fall cruise, with very few crabs of either sex occurring in water deeper than 40 fathoms.

A bay trawl was made on December 16, primarily to check out the new equipment on the ski-barge. A total of 101 market crabs, ranging in size from 30 to 83 mm, was caught.

The first draft of the section on crab migrations for the crab bulletin was completed, and the first draft of the section on the crab sport fishery is nearing completion.

Shrimp: Two samples of spot prawns were obtained from the fish dealer at Monterey. The prawns were sexed, measured and weighed at the Menlo Park laboratory. Most of the prawns were females (69.4%). The remainder were 28.9 percent males and 1.7 percent transitionals. Average heads-on weight was 6.5 per pound. Individual length-weights were also determined.

Bay shrimp samples were also taken on two boats operating near Alviso and Coyote Slough in South San Francisco Bay. The shrimp were sexed, measured and weighed. Sex ratios were 47 percent male and 53 percent female. Heads-on counts per pound averaged 354 with a range of 314 to 392.

Oysters: Oyster seed counts were made on the shipment of seed from Liberty Bay, Washington. Random samples of 100 cultch gave an average count of 4.8 seed per shell with a range of 0 to 19. A total of 36 percent of the shells had 0-1 seed per shell. These are rather low counts compared to previous shipments from Washington State and also Japan.

4. SHELLFISH LABORATORY OPERATIONS (Bartlett Project M-64-R-6)

The holding tanks in the Marine Culture Laboratory are well supplied with specimens. The Oyster Mortality Project supplied 20 Japanese oysters, *Crassostrea gigas*, from Humboldt Bay. These six year old oysters are being conditioned, and will eventually be used in developing disease resistant strains. A sample of ovigerous Dungeness crabs, *Cancer magister*, was supplied by members of the Shellfish Program. The eggs of these crabs should be ready to hatch by mid-January. The Shellfish Program also supplied Japanese scallops for conditioning. In addition the laboratory has red abalone under observation in a few tanks.

The emphasis in laboratory construction and equipment hook-ups is now directed toward the completion of the Forage Culture Room and the Larvae Culture Room.

On December 15 and 16 the submersible seawater pumps received their first pounding by high seas. Project members were concerned by the 25 to 30 foot waves, however, the pumps remained secure.

Overall progress has been increasing noticeably since the appointment on December 2 of Randy Kelly as a Junior Aquatic Biologist.

PLANNED PROJECTS FOR THE MARINE CULTURE LABORATORY ARE:

Projects

I* Abalone (*Haliotis rufescens*) Beginning December 1970

Development of information and techniques for mass production.
Conditioning, spawning, rearing to maturity in lab.
Establish feeding requirements.
Growth in selected temperatures and filtered vs. non-filtered water.

Small scale activities in use of natural environment for rearing.
Seed stock to be made available for other projects.

II* Oyster (*Crassostrea gigas*) First Phase - January - June 1971

Development and selection of naturally resistent strains from stocks surviving mortality years.

Selected parents of known year classes and history of survival thru known mortality periods, particularly of Humboldt Bay, will be spawned and seed produced on cultch for use of the Disease and Mortality Project, and the Oyster Project.

III* Crab (*Cancer magister*) Beginning December 1970

Development of toxicity testing techniques.

Hatching of zoea from egg masses on female crabs and rearing to first crab instars. Larvae will be subjected to controlled water quality variations to develop measures of survival.

IV Shrimp (*Pandalus platyceros*)

Development of hatching and rearing techniques for commercial type rearing.

V Scallop (*Patinopecten yessoensis*)

Development of techniques for breeding and rearing scallops for commercial harvest.

VI Clams (*Tivela stultorum, Tapes semidecussata*)

Mass production of seed stock for commercial seeding and for enhancing highly dug beaches for sport digging.

* High priority projects.

5. OYSTER DISEASE AND MORTALITY STUDY (N.M.F.S. Contract)

Routine investigations were carried out during December. Losses among all observed populations were low. Several Pacific oysters which have survived a number of high mortality years in Humboldt Bay were taken to the Marine Culture Laboratory at Granite Canyon to be used as spawning stock. The survival of their progeny will be tested against that of commercial plantings in Humboldt Bay. It is anticipated that a more resistant strain of oysters can be eventually developed.

The processing and examination of tissue continues.

The project is on schedule.

6. SEA OTTER

Equipment maintenance and repair, as well as inclement weather, severely curtailed field operations this month.

On December 10 and 11, permanent intertidal transects in the Cambria and Piedras Blancas areas, established and surveyed a year ago, were revisited. The Cambria transect was lost while the Piedras Blancas transect markers were easily located. Algal and invertebrate assemblages were similar to the previous year. An exception was the observation of numerous juvenile kelp crabs, *Pugettia producta*, in niches on the rocks under the overlying algae.

Field trials with the floating baited sea otter trap have suffered setbacks. The trap was moored for observation in the kelp bed off Hopkins Marine Station where a group of 65-75 sea otters have been rafting for several months. On the third day, the trap was gone from its mooring. We found it some distance away in the kelp off Cannery Row, damaged beyond repair. The bait, an abalone and two crabs, were still in the trap. We surmise that the stormy weather with heavy swells during the night were responsible for the trap's destruction. From our observations and retention of undisturbed bait in the trap, it appears that sea otters have shown little interest in the baited trap.

Sea otters in the Monterey area have become accustomed to boats and divers around them. It is not uncommon for an otter to approach, nudge, and bump project divers both on the surface and underwater.

7. ABALONE

Fishery: Landings of pink and white abalone at Santa Barbara from the Channel Islands have decreased substantially since the November 22 minimum size limit increase from 6 to 6¼ inches. Landings of these species from Santa Barbara and San Clemente Islands remained good. The major landings during this period were green and red abalone. Green landings increased substantially following the size limit decrease from 7¼ to 7 inches. The percentage of dark meats from greens varied from 40 to 60% depending on the area fished.

Landings at Morro Bay have not changed appreciably since early summer. Three to five fishermen making day trips average 3 to 5 dozen red abalone per day. Weights of processed meats per dozen continue to rise with fishermen averaging about $18 a dozen. Although an occasional fishermen is observed on the Point Estero beds, most of these landings are from the Lion Rock to Pecho Rock area.

Research: Project personnel, with the assistance of Mac Oliphant, spent several days measuring and weighing abalone at Veterans Fishery in Santa Barbara. Over 100 dozen abalone were weighed in an effort to obtain new conversion factors for our statistics on commercial abalone landings. Preliminary figures indicate that the present conversion factors are 10 to 20% high. Pounds per dozen for December were; red abalone, 42.5; pink abalone, 21.1; white abalone, 21.5; and green abalone, 25.0.

The project gave assistance to wildlife protection on undersize abalone cases. Two commercial landings were inspected for hybrid abalone.

Diving operations at Santa Cruz Island were conducted from the patrol boat YELLOWTAIL. Several beds of pink, green and red abalone were inspected at the more popular diving areas at Yellow Bank and Blue Bank. Personnel included were: Russ Goodrich, Darrel Yount, Howard Martin, Hank Hoover, Jack Vorhies, Steve Schultz, and Richard Burge.

Construction began on a small shoreside laboratory to be used for abalone growth and feeding experiments. The cement floor was poured with a terminal taper and the drain was installed. Framing has also been completed. Estimated completion time is early January, 1971.

A trip was made to Fort Bragg for a meeting of the abalone Sea Grant personnel. Plans were made for purchasing equipment. A single dive was made to examine a new area as a possible growth and mortality study site. The dive terminated with the unfortunate drowning of warden Paul Smith.

8. PELAGIC FISH

A. Fishery

Landings in tons	December		January - December 31		
Species	1970*	1969	1970*	1969	10 yr. mean 1959-1968
Anchovy	13,358	17,080	87,848	67,632	10,048
Mackerel, jack	1,720	735	23,126	25,961	34,326
Mackerel, Pacific	-0-	40	301	1,179	12,508
Sardines	20	5	280	53	10,689
Squid	1,260	1,153	9,520	10,385	7,602
TOTAL	16,358	19,013	121,075	105,210	75,173

* Estimated. Accumulated landings are revised monthly.

Anchovy: Anchovy reduction landings were down from previous months due to the holiday season and poor weather. This seasons total of approximately 56,000 tons is about 8,000 tons ahead of last year's record pace. The catch localities this month were primarily Santa Monica Bay and the San Pedro Channel.

Jack Mackerel: Fishing for jack mackerel continued at a good pace through most of the month. The fish taken during this period have been small (6" to 10"), young of the year being the dominate year class. Most of the effort this month has centered around Catalina and San Clemente Islands. Occasional catches have been made at Santa Barbara Island and Cortes Bank.

Pacific Mackerel: No landings due to the moratorium.

Sardines: A small fishery has developed in San Diego Bay. Lampara boats are catching sardines to be used as dead bait.

B. Live Bait

Live bait availability was fair to good this month in southern California. A combination of stormy weather and the approach of the holidays has reduced live bait demand.

Anchovies have been difficult to find in San Francisco Bay since early this month when storms caused heavy runoff into the bay. Los Angeles-Long Beach bait haulers were able to meet commitments but they reported having to work harder than in past weeks. At Newport Beach and San Diego, bait was easy to catch until the last week when anchovies were reported to be "wild" making them difficult to net. It is expected that things will improve as the storms pass.

C. Fisheries Resources Sea Survey (M63R)

Personnel were occupied most of the month editing data from the last two sea survey cruises and writing cruise reports. Data Reports Nos. 18 and 19 covering 1968 and 1969 were sent for printing. A computer program was written to edit and screen sea survey data. This will improve data accuracy and save much time "hand" editing data reports. The new scientific echo sounder for our acoustic surveys was installed aboard the ALASKA at months' end.

Vacation and CTO was taken by most personnel over the Christmas season.

D. Sea Survey Data Analysis

During the month 3,500 jack mackerel otoliths were read. This is all part of our age assignment program evaluation to determine the accuracy of past age assignments.

Much of the time was also spent in reviewing, editing and completing various papers.

The first phase of the Pelagic Fish Systems Analysis Plan was completed and approved. This will give the Department a total organizational concept of the present Pelagic Fish Program. We also feel that this will give us a number of management options realistically tuned to present day fishery problems and budgetary considerations.

9. BIG GAME FISH

A. Albacore

Research

Life History: No tag recoveries this month.

Age and Growth: No samples were obtained this month.

Population Dynamics: Three log books were collected bringing the total for the season to over 600 logbooks representing nearly 10,000,000 pounds of albacore. All logs have now been coded and card punched for computer processing.

Fishery

Sport: No sportfishing was reported for December.

Commercial: The landings for December have all but ceased. Most boats have returned to their home ports. This closes a season which has surpassed all expectations giving California twice the 1969 landings and the best season in 5 years.

B. Bluefin Tuna

Research

Life History: Age and growth -- reading of 1969 scale samples was continued, which will lead to a safe determination of the 1969 migration.

Fishery

Commercial: No action was reported for the month but a computer program, to determine catch per unit of effort, was nearing completion.

Sport: No action reported.

C. Bonito

Life History: Age and growth work was being continued.

Migration: Over 200 fish were measured, tagged and released at King Harbor, Redondo Beach early in the month. Thirteen tags were returned during December.

Fishery

Commercial: Fishing was sporatic and mostly confined to local waters.

Sport: Bonito still held a significant place in sportfish landings.

10. SPORTFISH

A. Partyboat

Research: Age and growth studies of tagged sand bass from Newport Harbor were continued. Supporting data were prepared for legislation aimed at establishing proper savings gear and fishing areas for California halibut. Commercial and partyboat catch statistics for the Horseshoe Kelp area were assembled for discussions of a proposed airport to be built over Horseshoe Kelp. The total area that could be directly affected is as large as Santa Catalina Island.

Fisheries: The 1970 partyboat catch of key species accumulated through October, compares with the 1969 catch as follows: (nearest 100)

Through November	1970	1969
Rockfish	*2,513,600	1,852,500
Kelp, sand bass	920,700	1,234,100
Bonito	626,300	1,115,300
Barracuda	369,300	350,500
Salmon	98,100	110,700
Yellowtail	94,600	75,500
California halibut	29,400	27,300
Striped bass	14,700	19,700
Sturgeon	1,180	1,885

* An all-time record dating from 1947

Although the total catch and the catch of the more popular species is generally below 1969, the angler count is up 9 percent, to 850,700 the second highest partyboat angler tally on record.

B. Central California Marine Sportfish Survey

Partyboat and skiff sportfish sampling was conducted at Monterey.

Lingcod tagging operations were successful in capturing and tagging 45 lingcod this month in the Hopkins Marine Station study area. All were caught underwater by scuba divers and tagged aboard the project's research vessel OPHIODON. Three captured lingcod were previously tagged; two of them were at liberty for almost two years.

One day was spent with Ron McPeak and George Lockwood of Kelco Co. discussing possible affects of kelp cutting in central California.

Data analysis is proceeding on schedule.

11. INSHORE FISHERIES HABITAT EVALUATION AND MONITORING

The program was assisted by DJ-F22R in conducting a general environmental survey off Cojo, near Point Conception. This is the proposed site of a nuclear powered, electric generating plant. The diving platform was an 85-foot boat which was provided by the Jans Foundation in conjunction with the Los Angeles County Museum. Robert Lavenberg acted as Chief Scientist on board the vessel. By this survey, we have gained a knowledge of the environment on which we can base our present recommendations, and which will enable us to conduct studies in the future that will be meaningful in this particular pre- and post-constructional area.

Personnel from the Los Angeles County Museum provided us with the 85-foot boat SEARCHER to conduct a general environmental survey and make a fish collection at Farnsworth Bank. Again, the Jans Foundation was responsible for providing the boat. The survey was done in 70-110 feet of water. Pictures were taken to document the flora and fauna. Farnsworth Bank is being considered as an Underwater State Park.

Another general survey dive was conducted at the Horseshoe Kelp in 70 feet of water. This was done with the assistance of DJ-F22R. We recorded 5 species of algae, 38 species of invertebrates and 15 species of fish. The

most interesting notation was that there was an abundance of old, heavy red abalones, *Haliotis rufescens*.

The comments and recommendations requested by Sacramento were made concerning the proposed STOLport off Santa Catalina.

SAN ELIJO-SAN DIEGUITO SURVEY (Contract FGS-1451)

The final report is being typed as an MRR Reference Report.

ENVIRONMENTAL AND BEHAVIORAL STUDIES OF COASTAL SPORT FISHES (DJ-F22R)

Project personnel assisted the IFHEM project in a three day benthic survey at Cojo Bay, west of Santa Barbara. We observed numerous large kelp bass, *Paralabrax clathratus* among mixed *Macrocystis* and *Pterogophora* kelp beds in this area which may be a future site for a nuclear power plant.

We plan a three day search for and study of nearby Gato Rock, a shallow reef whose base is in over 300 feet of water, next month.

We spent two days documenting the fish fauna at Farnsworth Bank, offshore from Santa Catalina Island. This reef also has a deep water base. We did not observe any bases, *Paralabrax* spp., while sheephead, *Pimelometopon pulchrum*, were abundant. This bank is only 1.5 miles off the Catalina coast.

The remainder of the month was spent using up excess vacation and "Z" time.

12. SPECIAL PROJECTS

A. Southern California

Half the month was spent attending a meeting on marine pollution at the FAO in Rome.

The rest of the month was mostly devoted to environmental problems and reports.

B. Water Quality

Comments and recommendations for waste discharge requirements were provided for the following waste discharges:

1. Summerland Sanitation District, Santa Barbara County
2. Golita Sanitation District, Santa Barbara County
3. Southern California Edison - Ormond Beach Steam Station offshore fuel pipeline installation, Ventura County
4. Union Oil Company, offshore exploratory drilling, Santa Barbara Channel, Santa Barbara County
5. Signal Oil and Gas Company, Los Angeles-Long Beach, Los Angeles County

MERCURY IN MARINE RESOURCES

Food and Drug Administration reports of mercury in canned tuna and frozen swordfish increased our activity in this area. Considerable time was spent coordinating activities with other agencies and answering questions of the public. Problems related to heavy metals and pesticides in the marine environment will increase the work load of this section.

San Gabriel tidal prism, Los Angeles-Orange counties

Oil field brine discharged to the tidal prism of the San Gabriel River may be affecting fish and wildlife resources. Inspections indicate oil has been discharged to waters of the state in this area. Further inspection will be made in this area.

13. MARINE FISHERIES STATISTICS

A. Source Documents

Editing continues on September market receipts, December cannery receipts and December sportcatch logs. The "Hot List" was mailed to field offices for use by our enforcement personnel; boat lengths were added to 1960 through 1967 lobster reports; master list changes were sent to Sacramento; the sport catch letter was mailed and we proof read several manuscripts.

As of the middle of December, 8,614 commercial fishing licenses, 4,258 commercial boat registrations and 451 partyboat permits were processed for the 1970-71 license year.

B. Machine Data Processing

We keypunched, tabulated and/or sorted routine and special reports including: cannery report, bluefin deck, port code lists, geographic origin report, cumulative report, marine sport catch, processor reports, southern trawl report, cannery report, northern trawl report, squid report and Monterey Bay oceanographic data.

C. Information

The following routine monthly reports were decoded and distributed: August statistical reports, November processor reports, cannery check runs, marine sportcatch reports. November tuna and sportcatch letters were completed and mailed.

The following special reports were decoded and distributed: special trawl reports 1965 (Schott); trawl reports 1958 (Heimann); 1941 geographic origin and cumulative reports, total catch for past 10 years in Laguna and Newport Beach area (Irvine Ranch Water District); 1968, 1969 catch and value (Security Pacific National Bank Research Department); assorted reports on abalone and lobster landings, Santa Barbara, 1965 through 1969 (Oppen vs. Union, McCutchen, Black, Verleger and Shea); 10 years marine sport catch (U.S. Army Corps of Engineers); ghost shrimp landings 1964 through 1969 (Wendell Gayman, Oceanographer); abalone and lobster landings 1964 through 1969, sport and commercial (Lachlan Brown, L. A. Council of Divers); and 1969 bay shrimp (Dahlstrom).

D. Fishery Surveillance

We are weighing commercially gathered abalone to provide accurate values for tax and reporting purposes. The following are most recent values:

Species	n	$\bar{X}$ lb.	lb./doz.	current accepted weight lb./doz.
Red	411	3.50	42.0	50.0
Green	409	2.19	26.0	35.0
Pink	401	1.96	23.5	25.0
White	12	1.83	22.0	25.0

E. Ecology and Vital Statistics

Our letter to D. D. Dominick, Commissioner of the Federal Water Pollution Control Administration, has been answered by E. T. Jensen, Assistant Commissioner. The reply clearly states the present status of the Administration's data bank program.

The following banks are in existence or are in the process of construction:

a. Municipal Wastes Inventory (computer products now available)

b. National Industrial Wastes Inventory (one year until discrete information on all major water-using industries will be available)

c. Thermal Discharge (750 plants with capacities of 25 megawatts or greater are being questioned: data will be available early 1971).

Our inquiry to the State Water Resources Control Board has been answered by R. H. Lewis, Acting Chief, Planning and Research Division. Plans for the Board's data bank will be complete July 1, 1973. The data bank will contain present and projected waste load volumes and characteristics as related to ocean disposal.

We have been invited by both Federal and State organizations to draw data bank products as required.

D. Bracher, CalCOFI Technician with Hopkins Marine Station has supplied 1951-55 oceanographic information for Monterey Bay. These data will be added to the Monterey Bay card deck, providing us with 16 years of observations. We constructed our own deck since Monterey Bay data was absent from NODC.

14. VESSELS

Alaska: Entire month in yard for annual drydocking and overhaul.

N. B. Scofield: The vessel returned to San Pedro on the 3rd from a month long crab cruise off northern California coast. Balance of the month was in the yard for annual drydocking and overhaul.

Nautilus: Vessel conducted 4 days of oceanographic work off San Francisco and 9 days of bottomfish study off San Francisco.

15. MISCELLANEOUS

A. Meetings, Talks and Visitors

December 1	-Ebert and Haseltine met at Granite Canyon with Orcutt, Katkansky, and Dahlstrom to discuss future programs and objectives of the Marine Culture Laboratory.
December 2	-Moore attended an Environment Section meeting on environmental impact studies now required of major construction projects, Sacramento.

December 4 -Gates attended planning meeting with MRR and ORB personnel regarding bottomfish--Menlo Park.

December 7, 8, 9 -Gates, Orcutt, Jow, and Dahlstrom participated in the National Marine Fisheries Service and Department of Fish and Game Town Hall Meetings at Fort Bragg, Eureka, and Crescent City. Short presentations on the trawl and shellfish fisheries and research were made.

December 9 & 10 -Gates attended Regional Managers/Staff Meeting, Sacramento.

December 9 -Wild and Wilson attended a presentation on "Sea Otters, an Endangered Species" presented at the Oakland Auditorum as a public service and fund raising event by the Friends of the Sea Otter. Speakers were William Bryan, James Mattison, and Judson Vandevere.

December 11 -Wild and Wilson met with Aryan Roest of Cal Poly to discuss disposition of sea otter skeletal materials: Cal Poly, San Luis Obispo.

December 14 -Ebert met at Granite Canyon with Lawrence E. Birke, Jr., biologist with Brown and Caldwell to discuss Dungeness crab studies in relation to sewage disposal.

December 17 -Wild and Wilson met with Victor Morejohn of Moss Landing Marine Laboratories to develop a standardized format for dealing with dead sea otter recoveries: Moss Landings Marine Laboratories.

December 18 -Moore attended an Army Corps of Engineers meeting regarding beach erosion of Los Angeles County beaches.

December 21 -Orcutt met with the Environmental Task Force in San Francisco to develop preliminary wording for an agreement with P.G. & E. on developing a nuclear site at Davenport.

B. Personnel

November 12 -Joseph M. Falcone, Motor Vessel Engm. Research Vessels, San Pedro, appointed perm.

December 1 -John A. Aplin, Assoc. Mar. Biol. Coastal Fisheries, Menlo Park, retired.

December 2 -Randolph O. Kelly, Jr. Aq. Biol. Shellfish Lab. Oper. (Bartlett Proj.) Monterey, apptd.

Doyle E. Gates

Doyle E. Gates,
Regional Manager

WILDLIFE PROTECTION BRANCH MONTHLY REPORT FORM

Region MRR

Fill-In Section

Report for Month of DEC. 1970

A. Reserve Warden Activities

1.	Number of patrols made by reserve wardens	10
2.	Hours worked	92
3.	Arrests or citations issued by reserve wardens (Wardens not present)	0
4.	Arrest Assists or Citations Issued by Reserve Wardens (Wardens present)	51
5.	Personal vehicle miles traveled on patrol	0
6.	Personal vehicle miles traveled to and from assignment	480

B. Hunter Safety Training Program

1.	Time spent on hunter safety training	
2.	Hunter safety instructors contacted	
3.	Hunter safety training classes attended	
4.	Hunter safety instructor classes attended	

C. Deer Accidentally Killed

1.	Road kills by motor vehicles	
2.	Kills from other causes (railroads, canals, dogs, etc.)	

D. Arrest Report

Number of persons arrested as compared to same periods last year:

153	299
Current Month	Same Month Last Year
4131	3349
Total Arrests This Year	Total Same Period Last Year

Remarks - (To explain any marked changes in above totals)

Arrests up 782 over last year

WLP (Rev. 4/69)

Fines paid

$11,034.00	$7,648.52
Current month	Same month last year
$107,446.30	$78,410.32
Total fines this year	Total same period last year

Remarks (To explain any marked changes in above totals)

Fines up $29,035.98 over last year.

Jail days served	-
Jail days suspended	-
Cases dismissed	8
Cases in which all of fine was suspended	7
Juvenile cases turned over to juvenile authorities or parents contacted	4
Hunting licenses revoked by court	
Hunting licenses suspended by court	
Angling licenses revoked by court	
Angling licenses suspended by court	

Summary: Following is the number of violations prosecuted against type of violation

Hunting no license		Angling no license	58
Waterfowl		No Colo. Riv. Use Stamp	
Deer		No inland stamp	
Pheasant		Trout	
Loaded gun in car		Other inland fish	
Public shooting area trespass		Angling more than one rod	10
Trespass (2016-18)	4	Clams and shellfish	42
Resident small game		Commercial abalone	3
Doves		Commercial lobster	2
Pigeons		Commercial fish	10
Bear		Ocean sportfish	10
Baited pond shooting		Pollution (5650)	10
Protected nongame birds and fully protected birds		Stream obstruction (5948)	
Litter (5652)		Suction dredge (5653)	
		Miscellaneous	4
		Total	153

E. Assistance to Other Law Enforcement Agencies

1. Number of cases filed by Wildlife Protection officers for violation of Penal or other code sections
2. Number of cases filed by Wildlife Protection officers for city or county ordinances
3. Number of cases turned over to federal agencies for filing
4. Number of cases of assistance to other agencies resulting in filing of charges (not included in 1, 2, or 3 above)
5. Number of cases involving felony charges